

Magnetic resonant and non-resonant investigations of LiLnF₄ (Ln = Y, Tm) powders

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Abstract

The properties of dielectric powders of the Van Vleck paramagnet LiTmF₄ and its diamagnetic analogue LiYF₄ have been investigated by both resonant methods (EPR, NMR, and the mass-spectroscopy) and non-resonant ones (conductometry and magnetization measurement). On the basis of experimental data and theoretical calculations a self-consistent model for the magnetic and other properties of these powders is suggested. Two structural phase transitions induced by the magnetic field are discovered in fine LiTmF₄ powder at low temperature in a high magnetic field.
